

## CLAIMS

What is claimed is:

1. A method for fabricating a field emission structure, comprising:  
forming a dielectric layer at least partially around at least one emitter tip;  
forming a mask comprising a material which is removable with selectivity over a material of said dielectric layer, at least one aperture of said mask being located substantially over said at least one emitter tip;  
removing portions of said dielectric layer that are laterally adjacent to said at least one emitter tip through said at least one aperture;  
removing said mask;  
forming another dielectric layer adjacent to said dielectric layer;  
forming a conductive or semiconductive layer adjacent to said another dielectric layer; and  
exposing said at least one emitter tip through said another dielectric layer and said conductive or semiconductive layer.
2. The method of claim 1, wherein said forming said dielectric layer comprises forming said dielectric layer to have a thickness which is less than a height of said at least one emitter tip.
3. The method of claim 1, wherein said forming said mask comprises forming said mask from at least one of chromium, polysilicon, and molybdenum.
4. The method of claim 1, wherein said forming said mask comprises:  
depositing a layer comprising mask material; and  
planarizing said mask material.

5. The method of claim 4, wherein said planarizing comprises removing at least a portion of at least one electrically conductive defect that extends through said dielectric layer and into said layer comprising mask material.

6. The method of claim 1, wherein said removing portions of said dielectric layer comprises exposing said portions to at least one etchant.

7. The method of claim 1, wherein said forming said another dielectric layer comprises forming said another dielectric layer to have a surface which is substantially coplanar with an apex of said at least one emitter tip.

8. The method of claim 1, wherein said forming said another dielectric layer comprises covering at least one electrically conductive defect that extends through said dielectric layer.

9. The method of claim 1, wherein said exposing comprises:  
forming at least one aperture through said conductive or semiconductive layer in alignment with said at least one emitter tip; and  
removing portions of said another dielectric layer that are laterally adjacent to said at least one emitter tip through said at least one aperture.

10. The method of claim 9, wherein said forming said at least one aperture comprises planarizing said conductive or semiconductive layer.

11. The method of claim 9, wherein said removing portions of said another dielectric layer comprises exposing said portions to at least one etchant.

12. The method of claim 9, wherein said removing portions of said another dielectric layer is effected without substantially removing remaining portions of said conductive or semiconductive layer.